

# **SOCIAL/TRADITIONAL MEDIA'S IMPACT ON POLITICAL POLARIZATION IN THE USA**

SHUBH GOYAL

## **1. RATIONALE**

Political polarization is apparent in the American society today. It is true that the American people have always had very diverse political views and some experts in recent past thought that political polarization in the US was no worse than before [1, 2]. However, the perception that political polarization is increasing in the American society is almost universal in mainstream media with some quantitative evidence [3, 4, 5, 6]. Often the blame is assigned to the rise of social media as the major influencer of the political opinion in the US [7, 8, 9, 10].

In today's world, social media plays a huge role in providing political commentary to the people [11]. People no longer depend on the traditional media (e.g. newspapers, magazines, TV/radio channels) to get opinion on political matters. Social media makes it possible for any one to share their opinions with large sections of the society. Both traditional and social media companies want to maximize their advertisement revenue and hence want to maximize the time people spend with their content. With this objective in mind, a traditional media company decides who their target audience is and tailors its content to appeal to that audience. Social media companies go one step further and use elaborate machine learning algorithms to customize the content an individual sees to appeal to their specific bias.

Machine learning helps a social media company estimate the political bias of its users individually and identify the content liked by the users with a specific bias. The social media platform then presents each user with the content most likely to appeal to them. The machine learning algorithms are designed to maximize the user's engagement with the platform and often fail to prevent falsehoods or other content of extreme nature from being presented to large number of users. Social media companies have no penalty to pay from legal perspective for presenting such content to their users. Section 230 of the Communications Decency Act of 1996 protects social media companies from any legal liability for any content on their platforms not explicitly created by the company. In fact, some social media companies may be knowingly presenting extreme content to the users because such content is known to grab the users' attention and hence increase their engagement with the platform. Many people use social media as their main source for getting political news & opinions and are clearly susceptible to adopting extreme political views because of their constant exposure to such views.

However, some experts push back against the narrative above. Several arguments have been presented to counter the notion that social media is responsible for the rise in political polarization in the US:

- Polarization in the US has been increasing since 1990s much before the advent of social media [12].
- The rise in polarization is most evident among older Americans, who are less likely to use social media [13, 14].
- Rather than providing *echo chambers*, where people just hear views similar to their own, social media exposes people to politically diverse views, which may reduce mass political polarization [15, 16, 17].
- Exposure to opposing political views does not necessarily lead to moderation [18, 19]. Political views meant to "rally the base" may actually cause further alienation among people with opposing viewpoint.
- The number of *fake news* stories seen by an average American is not significant and is unlikely to have a significant impression on the viewers' political thinking [20].

Also, research literature points to other possible causes of polarization such as emergence of highly partisan traditional media, increasing racial divisions & economic inequality in the US and the impact of trade globalization [12, 21].

## 2. RESEARCH QUESTIONS, PROCEDURES AND DATA ANALYSIS

Clearly, social (and traditional) media has a complex relationship with political polarization in the society and we do not yet understand this relationship very well. Our current research project is an attempt to understand this relationship via simulations. Specifically, we aim to understand the conditions under which social and traditional media may cause noticeable increase or decrease in political polarization. In particular, we want to understand the role of *echo chambers*, which by definition provides political views within a narrow range. For this purpose, we created a software simulation model where the political *shades* of the individuals in a population change as a result of their encounters (e.g. reading an article or watching a video) with social and traditional media.

In our simulation model, the entire spectrum of views on a set of political issues is modeled as a range of values between 0 and 10. The political *shade* of an individual is a value in this range. Shade values 0 and 10 represent most extreme political views in opposite directions (e.g. *Far-Left* and *Far-Right*) and a shade of 5 represents moderate/centrist political views. In our simulations, we interpret the political shade as representing an individual's position on the entirety of issues although it is possible to interpret the shade value as political views on a specific issue (e.g. gun control) only. The political shade of an individual (*individualShade*) is modeled as the weighted average of a core immutable component (*coreShade*) and a second component (*acquiredShade*) that changes in accordance with the social and traditional media encounters the individual has:

$$individualShade = \alpha \times coreShade + (1 - \alpha) \times acquiredShade$$

, where  $0 \leq \alpha \leq 1$ .

Like individuals, the social/traditional media encounters are also characterized by political shades in accordance with political views they present. Some of these encounters may be in *echo chambers* where an individual basically comes across shades very similar to their own with a possible tilt towards the extreme. Other encounters may expose the individual to a diversity of political shades distributed in different ways (e.g. uniformly distributed across the spectrum, normally distributed around the center, binormal distribution to represent partisanship). In addition to their shade, the social/traditional media encounters would be further characterized by their nature - whether they are meant to *rally the base* or *build bridges* across the political divide. In our simulation model, an individual's *acquiredShade* changes in different ways based on the nature of a social/traditional media encounter. A social/traditional media encounter with a persuasive *build bridges* message attracts an individual towards its shade by adding/subtracting a small value to/from the individual's *acquiredShade*. On the other hand, an encounter with a *rally the base* message will only impact individuals in the same *base* as this message. In our simulation model, the *base* associated with a message is the set of individuals with shades in a small range around the shade of the message. Individuals outside this base are not impacted at all by such a message.

An individual may find *echo chambers* in both traditional media and social media. However, we think that *echo chambers* found in social media are more effective in engaging the user because of the machine learning enabled customization of content and the interactive nature of social media. So, higher use of social media may be correlated with a higher chance of encountering an *echo chamber*. In our simulation model, the probability that a social/traditional media encounter involves an *echo chamber* is a configurable parameter. As mentioned before, the shade associated with an *echo chamber* encounter is close to the individual's current shade with a possible tilt towards the extreme. If the *echo chambers* have a tilt towards the extreme, persistent *echo chamber* encounters will move the individuals towards extreme shades. Further, the simulation model allows for the *echo chambers* to be addictive (i.e., an encounter with an *echo chamber* increases the probability of another *echo chamber* encounter). We will simulate all these possibilities. Finally, in our simulations, we assume that an *echo chamber* only has *rally the base* messages to offer. A simulation involves each individual in the population going through a configurable number of social/traditional media encounters under a specific combination of conditions discussed above. We visually compare the shade distribution of the population at the end of the simulation with that at the beginning. We repeat each simulation with multiple different seeds for random number generation to ensure that the results do not depend on a particular sequence of generated random numbers.

As part of our investigation, we will also evaluate some of the changes being considered to regulate social media. One proposal is to remove Section 230 granted legal protection that social media companies currently enjoy. Removing such a protection may force social media companies to remove patently false (and usually extreme) claims from circulation and thus prevent an echo chamber from pushing extreme content to the user. Another proposal is to require a social media platform to clearly inform the users regarding the nature of the content recommendation algorithms and seek their explicit permission before

using a specific algorithm for them. Such a requirement may allow many users to completely escape echo chambers and extreme content on social media.

### 3. IMPORTANCE OF OUR WORK

Our research is clearly important for the American society. Political polarization of the kind we have seen in recent years possibly presents an existential threat to United States. There is a growing realization of the dangers of extreme content reaching a large number of vulnerable people because of amplification by the social media platforms. At the same time, America loves its freedom of speech. Freedom of speech enjoyed by Americans is not available in most societies, including democratic ones. So, Americans want to preserve their freedom of speech and many people think that any restriction on social media is equivalent to curbing the freedom of speech. So, any regulation of social media must be done in a manner that preserves Americans' freedom of speech. Clearly, this is a tough problem and we need to research the issues involved using all available tools. In our literature search on the topic so far, we did not find any previous work that examines these issues using the simulations based approach we have proposed. We hope that our research will contribute to the ongoing conversation on this very important topic.

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